PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 030243WO	**FOR FURTHER ACTION**	See Form PCT/IPEA/416
International application No. PCT/US04/06759	International filing date *(day/month/year)* 05 March 2004 (05.03.2004)	Priority date *(day/month/year)* 06 March 2003 (06.03.2003)
International Patent Classification (IPC) or national classification and IPC IPC: **H04B 1/00**(2006.01) USPC: 375/130		
Applicant QUALCOMM		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 10 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
   a. ☐ *(sent to the applicant and to the International Bureau)* a total of ___ sheets, as follows:
      ☐ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
      ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
   b. ☐ *(sent to the International Bureau only)* a total of (indicate type and number of electronic carrier(s)) _____ , containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).
4. This report contains indications relating to the following items:
   - ☒ Box No. I Basis of the report
   - ☐ Box No. II Priority
   - ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - ☐ Box No. IV Lack of unity of invention
   - ☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   - ☐ Box No. VI Certain documents cited
   - ☐ Box No. VII Certain defects in the international application
   - ☐ Box No. VIII Certain observations on the international application

Date of submission of the demand 04 October 2004 (04.10.2004)	Date of completion of this report 17 January 2007 (17.01.2007)
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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/US04/06759

Box No. I Basis of the report

1. With regard to the **language**, this report is based on:

☒ the international application in the language in which it was filed.

☐ a translation of the international application into English, which is the language of a translation furnished for the purposes of:

☐ international search (under Rules 12.3 and 23.1(b))

☐ publication of the international application (under Rule 12.4(a))

☐ international preliminary examination (under Rules 55.2(a) and/or 55.3(a))

2. With regard to the **elements** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

☒ the international application as originally filed/furnished

☒ the description:
pages 1-14;21 as originally filed/furnished
pages* NONE received by this Authority on
pages* NONE received by this Authority on

☒ the claims:
pages 15-20 as originally filed/furnished
pages* NONE as amended (together with any statement) under Article 19
pages* NONE received by this Authority on
pages* NONE received by this Authority on

☒ the drawings:
pages 1/5-5/5 as originally filed/furnished
pages* NONE received by this Authority on
pages* NONE received by this Authority on

☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages
☐ the claims, Nos.
☐ the drawings, sheets/figs
☐ the sequence listing (*specify*):
☐ any table(s) related to the sequence listing (*specify*):

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

☐ the description, pages
☐ the claims, Nos.
☐ the drawings, sheets/figs
☐ the sequence listing (*specify*):
☐ any table(s) related to the sequence listing (*specify*):

** If item 4 applies, some or all of those sheets may be marked "superseded."*

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/US04/06759

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims 11, 18, 33, 40	YES
	Claims 1-10,12-17,19-32,34-39,41-44	NO
Inventive Step (IS)	Claims NONE	YES
	Claims 1-44	NO
Industrial Applicability (IA)	Claims 1-44	YES
	Claims NONE	NO

2. Citations and Explanations (Rule 70.7)
Please See Continuation Sheet

Supplemental Box

In case **the space in any of the preceding boxes is not sufficient.**

Continuation of:

V. 2. Citations and Explanations:

1. Claims 1 - 6, 8, 12 - 14, 16 - 17, 19, 23 - 28, 30, 34 - 36, 38 - 39 novelty under PCT Article 33(2) as being anticipated by Kim et al. (US 6219374).

2. Regarding claim 1, Kim discloses a transmitter operable to communicate with a receiver via a wireless communication channel, wherein the transmitter comprises: a processing subsystem (figure 1); and a transmitter subsystem coupled to the processing subsystem (figure 1); wherein the processing subsystem is configured to cover an initial data stream to be transmitted on a first wireless communication channel with at least two different spreading codes (figure 1, col. 3 lines 26 - 49); and wherein the transmitter subsystem is configured to transmit a resulting final data stream on a first wireless communication channel (figure 1, col. 3 lines 26 - 49).

3. Regarding claim 2, Kim further discloses the processing subsystem comprises a demultiplexer configured to demultiplex the initial data stream into a plurality of intermediate data streams (figure 1, col. 3 lines 26 - 49; where element 101 is being interpreted as a demultiplexer).

4. Regarding claim 3, Kim further discloses the processing subsystem is configured to cover each of the intermediate data streams with one of a set of spreading codes, wherein the set of spreading codes includes the at least two different spreading codes (figure 1, col. 3 lines 26 - 49).

5. Regarding claim 4, Kim further discloses the processing subsystem is configured to multiplex the intermediate data streams into the final data stream (figure 1, col. 3 lines 26 - 49; where the connection proceeding elements 110 and 111 and preceding element 112 is being interpreted as multiplex).

6. Regarding claim 5, Kim further discloses the spreading codes are different-length spreading codes (figure 1, col. 3 lines 26 - 49; where it is well known in the art that different spreading factors means different code lengths).

7. Regarding claim 6, Kim further discloses the spreading codes are Walsh codes (figure 1, col. 3 lines 26 - 49).

8. Regarding claim 8, Kim further discloses the initial data stream comprises a stream of symbols (figure 1, col. 3 lines 26 - 49).

9. Regarding claim 12, Kim discloses a receiver operable to communicate with a transmitter via a wireless communication channel, wherein the transmitter comprises: a processing subsystem (figures 1, 3); and a receiver subsystem coupled to the processing subsystem

Supplemental Box

(figures 1, 3); wherein the receiver subsystem is configured to receive an initial data stream via a first wireless communication channel (figures 1, 3, col. 4 lines 10 - 64); and wherein the processing subsystem is configured to decode the initial data stream using at least two different spreading codes (figures 1, 3, col. 4 lines 10 - 64).

10. Regarding claim 13, Kim further discloses wherein the processing subsystem comprises a demultiplexer configured to demultiplex the initial data stream into a plurality of intermediate data streams (figure 3, col. 4 lines 10 - 64; where the connection proceeding element r(t) and preceding elements 301 and 302 is being interpreted as a demultiplexer).

11. Regarding claim 14, Kim further discloses the processing subsystem is configured to decode each of the intermediate data streams using one of a set of spreading codes, wherein the set of spreading codes includes the at least two different spreading codes (figure 3, col. 4 lines 10 - 64).

12. Regarding claim 16, Kim further the spreading codes are different-length spreading codes (figure 3, col. 4 lines 10 - 64; where it is well known in the art that different spreading factors means different code lengths).

13. Regarding claim 17, Kim further discloses the spreading codes are Walsh codes (figure 3, col. 4 lines 10 - 64).

14. Regarding claim 19, Kim further discloses the decoded data stream comprises a stream of symbols (figure 3, col. 4 lines 10 - 64)

15. Regarding claims 23 - 28, 30, 34 - 36, 38 - 39, and 41, the steps claimed as method is nothing more than restating the function of the specific components of the apparatus as claims 1 - 6, 8, 12 - 14, 16 - 17, 19 above and therefore, it is rejected as in considering the aforementioned rejection for the apparatus claims 1 - 6, 8, 12 - 14, 16 - 17, 19, respectively.

16. Claims 1 - 10 and 23 - 32 novelty under PCT Article 33(2) as being anticipated by Wiberg et al. (US 2002/0172264).

17. regarding claim 1, Wiberg discloses a transmitter operable to communicate with a receiver via a wireless communication channel, wherein the transmitter comprises: a processing subsystem (figure 2); and a transmitter subsystem coupled to the processing subsystem (figure 2); wherein the processing subsystem is configured to cover an initial data stream to be transmitted on a first wireless communication channel with at least two different spreading codes (figure 2, paragraph 25); and wherein the transmitter subsystem is configured to transmit a resulting final data stream on a first wireless communication channel (figure 2, paragraph 25).

18. Regarding claim 2, Wiberg further discloses the processing subsystem comprises a demultiplexer configured to demultiplex the initial data stream into a plurality of intermediate data streams (figure 2, paragraph 25; where element 215 is being interpreted as a demultiplexer).

19. Regarding claim 3, Wiberg further discloses the processing subsystem is configured to cover each of the intermediate data streams with one of a set of spreading codes, wherein the set of spreading codes includes the at least two different spreading codes (figure 2, paragraph 25).

20. Regarding claim 4, Wiberg further discloses the processing subsystem is configured to multiplex the intermediate data streams into the final data stream (figure 2, paragraph 25; where the adder is being interpreted as multiplex).

21. Regarding claim 5, Wiberg further discloses the spreading codes are different-length spreading codes (figure 2, paragraph 25; where it is well known in the art that different spreading factors means different code lengths).

22. Regarding claim 6, Wiberg further discloses the spreading codes are Walsh codes (figure 2, paragraphs 25, 41, 44).

23. Regarding claim 7, Wiberg further discloses the spreading codes comprise +-and ++-- codes (figures 2, 3, paragraphs 25, 26).

24. Regarding claim 8, Wiberg further discloses the initial data stream comprises a stream of symbols (figures 2, 3, paragraphs 19, 25, 33, 45).

25. Regarding claims 9 and 10, Wiberg further discloses the transmitter comprises a component of a base station / mobile station operable in a wireless communication system (figure 1, paragraph 24).

26. Regarding claims 23 - 32, the steps claimed as method is nothing more than restating the function of the specific components of the apparatus as claims 1 - 10 above and therefore, it is rejected as in considering the aforementioned rejection for the apparatus claims 1 - 10, respectively.

27. Claims 1 - 6, 8 - 10, 23 - 28, and 30 - 32 novelty under PCT Article 33(2) as being anticipated by Proctor, Jr. et al. (US 2003/0035466).

28. regarding claim 1, Proctor discloses a transmitter operable to communicate with a receiver via a wireless communication channel, wherein the transmitter comprises: a processing subsystem (figures 1 - 4); and a transmitter subsystem coupled to the processing subsystem (figures 1 - 4); wherein the processing subsystem is configured to cover an initial data stream to be transmitted on a first wireless communication channel with at least two different spreading codes (figures 1 - 4, paragraphs 56 - 63); and wherein the transmitter subsystem is configured to transmit a resulting final data stream on a first wireless communication channel (figures 1 - 4, paragraphs 56 - 63).

29. Regarding claim 2, Proctor further discloses the processing subsystem comprises a demultiplexer configured to demultiplex the initial data stream into a plurality of intermediate data streams (figure 4).

30. Regarding claim 3, Proctor further discloses the processing subsystem is configured to cover each of the intermediate data streams with one of a set of spreading codes, wherein the set of spreading codes includes the at least two different spreading codes (figures 1 - 4, paragraphs 56 - 63).

31. Regarding claim 4, Proctor further discloses the processing subsystem is configured to multiplex the intermediate data streams into the final data stream (figure 4; where the element proceeding elements 508 is being interpreted as multiplex).

32. Regarding claim 5, Proctor further discloses the spreading codes are different-length spreading codes (figures 1 - 4, paragraphs 56 - 63).

33. Regarding claim 6, Proctor further discloses the spreading codes are Walsh codes (figures 1 - 4, paragraphs 56 - 63).

34. Regarding claim 8, Proctor further discloses the initial data stream comprises a stream of symbols (paragraphs 10, 54).

35. Regarding claims 9 and 10, Proctor further discloses the transmitter comprises a component of a base station / mobile station

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operable in a wireless communication system (figure 1, paragraph 29).

Regarding claims 23 - 28 and 30 - 32, the steps claimed as method is nothing more than restating the function of the specific components of the apparatus as claims 1 - 6 and 8 - 10 above and therefore, it is rejected as in considering the aforementioned rejection for the apparatus claims 1 - 6 and 8 - 10, respectively.

Claims 11 and 33 an inventive step under PCT Article 33(3) as being obvious over Wiberg et al. (US 2002/0172264).

Regarding claims 11 and 33, Wiberg discloses the processing subsystem is configured to cover an additional data stream to be transmitted on a second wireless communication channel with a single spreading code and wherein the transmitter subsystem is configured to transmit the resulting data stream on the second wireless communication channel, wherein the single spreading code is different than the at least two different spreading codes used to cover the initial data stream (figure 2, paragraph 25).

Claims 7, 18, 29, and 40 an inventive step under PCT Article 33(3) as being obvious over Dahlman et al. (US 6222875).

Regarding claims 7, 18, 29, and 40, Dahlman discloses the spreading codes comprise +-and ++-- codes (figure 3, col. 3 line 39, col. 5 lines 25 - 65).

---------- NEW CITATIONS ----------

US 6,219,374 B1 (KIM ET AL.) 17 APRIL 2001, see figure 1, col. 26 - 49.
US 2002/0172264 A1 (WIBERG ET AL.) 21 November 2002, see figure 3, paragraph 25.
US 2003/0035466 A1 (PROCTOR, JR, ET AL.) 20 Feburay 2003, see figures 1 - 4, paragraphs 56 - 63.
US 6222875 B1 (Dahlman et al.) 24 April 2001, see figure 3, col. 3, 5.